YUR'YEV, I.M.

USSR/Physics - Nozzle design FD-1440

Card 1/1 : Pub. 85 - 9/15

Author : Yur'yev, I. M. (Moscow)

Title : The designing of jet nozzles

Periodical : Prikl. mat. i mekh. 19, No 1, 103-105, Jan-Feb 1955

Abstract : The author gives the particular solutions to the approximate equations of planar and axisymmetric flow of gas, which solutions can be utilized to calculate the circumsonic parts of jets. He notes that the usual solution (e.g. of T. Meyer, 1908) for the pulseless Laval nozzle has the defect that the series representation in x,y possesses an unknown radius of convergence.

Institution :

Submitted : August 14, 1954

YUR'YEV, I. M.

FD-2407

USSR/Mechanics - Hydromechanics

Card 1/1 Pub 85-14/9

Author : Yur'yev, I. M.

Title : On the linearized theory of the flow of a supersonic stream of gas around a body of revolution

Periodical : Prikl. Mat. i Mekh., 19, 363-367, May-June 1955

Abstract : The author presents an approximate solution of the linearized equation of the axisymmetrical supersonic flow of a gas. He bases his method on the fact that the solution can be expressed in finite form. He states that this method of solution is applicable for the calculation of bodies of revolution with channels and for parts of bodies of revolution on segments of a contour not extending to the axis of symmetry. Results are tabulated and graphed.

Institution: --

Submitted : August 23, 1954

VORYEV, I.P.

86/13/3 533.11.18 :533.6.011.5

Circumscribing the Second Order Solution in the Problems of an Axial-Symmetrical Gas Flow

I.P. Voryev

Prikl.Mat.Mekh. 20(5),606-612 1956 U.S.S.R.

New approach is suggested to the second order theory which might be useful in solving certain non-linear problems. A simplified method of calculating bodies of revolution, or sections of bodies of revolution, situated on the parts of the stream lines coinciding the axis of symmetry, in a supersonic flow, is given. Bibl...

YUR'YEV, I.M.

40-21-2-22/22

AUTHOR: Yur'yev, I.M. (Moscow)

TITLE: On Spatial Supersonic Flows of a Gas, Which in the Domain of the Velocity Hodograph are Represented by a Surface (O prostranstvennykh sverkhzvukovykh techeniyakh gaza, izobrazhayemykh v oblasti godografa skorosti poverkhnost'yu)

PERIODICAL: Prikladnaya Matematika i Mekhanika, 1957, Vol 21, Nr 2, pp 303-304 (USSR)

ABSTRACT: Spatial supersonic flows of the type mentioned in the title include besides conic flows treated by Busemann [Ref 1] also several other flows which are obtained with the aid of the Legendre's function $\chi = ux + vy + wz - \varphi$ (treated by Nikol'skiy "On a class of adiabatic gas flows which in the space....., [Ref 2]). The author gives a linearized solution of the equations of Nikol'skiy-Busemann. There are 4 references, 1 of which is Soviet, 1 French, and 2 are German.

SUBMITTED: August 16, 1956

AVAILABLE: Library of Congress

1. Gas--Supersonic flow--Theory

Card 1/1

USCOMM-DC-55,127

YUR'YEV, I.M. (Moskva)

Calculating flat nozzles. Prikl.mat. i mekh. 22 no.6:839-840 N-D '58. (MIRA 11:12)

(Nozzles)

Yur'yev, I.M.

16(1);10(2) PHASE I BOOK EXPLOITATION SOV/2659

Akademiya nauk SSSR. Institut mekhaniki

Inzhenernyy sbornik, t. 25 (Engineering Symposium, Vol. 25) Moscow, Izd-vo AN SSSR, [illegible]. 218 p. Errata slip inserted. 2,200 copies printed.

Ed.: A.A. Il'yushin; Ed. of Publishing House: D.M. [illegible] Tech. Ed.: Ye. V. Kakumi.

PURPOSE: This book is intended for applied mathematicians, physicists and engineers.

COVERAGE: The book is a collection of articles published by the Department of Engineering Sciences of the Institut mekhaniki (Institute of Mechanics) of the Academy of Sciences, USSR. The articles discuss various aspects of the mechanics of materials and of fluid mechanics, such as stress and bending of beams, shells, plates and reels, supersonic gas flows, vibrations, etc. The problems are treated in a highly theoretical, i.e., mathematical, manner. References are given at the end of each article.

SOV/179-59-4-20/40

10(7)
AUTHOR: Yur'yev, I. M. (Moscow)

TITLE: On the Calculation of Nozzles

PERIODICAL: Izvestiya Akademii nauk SSSR. Otdeleniye tekhnicheskikh nauk. Mekhanika i mashinostroyeniye, 1959, Nr 4, pp 140-141 (USSR)

ABSTRACT: An accurate part solution of a nonlinear equation is put forward. This solution is part of the accurate equation for the three-dimensional gas motion over a large range of M ($0 < M < 1.7$). The result is used for the calculation of nozzles. There are 1 figure and 1 Soviet reference.

SUBMITTED: August 5, 1958

Card 1/1

YUR'YEV, I.N. (Moskva)

Theory of plane gas flows. Prikl. mat. i mekh. 23 no.1:201-208 Ja-F '59. (MIRA 12:2)

(Aerodynamics, Transonic)

YUR'YEV, I.M. (Moskva)

Approximate solution of basic boundary problems of plane supersonic gas flow. Inzh. sbor. 25:188-196 '59. (MIRA 13:2)
(Aerodynamics, Supersonic)

YUR'YEV, I. M.

PHASE I BOOK EXPLOITATION SOV/4000

SOV/12-M-27

Akademiya nauk SSSR. Institut mekhaniki

Inzhenernyy sbornik, t. 27 (Engineering Collection, Vol. 27) Moscow, Izd-vo AN SSSR, 1960. 210 p. 2,000 copies printed.

Sponsoring Agency: Akademiya nauk SSSR. Otdeleniye tekhnicheskikh nauk.

Resp. Ed.: A. A. Il'yushin; Ed.: V. M. Akhmdov; Ed. of Publishing House: V.M. Akhmdov; Tech. Ed.: A.P. Guseva.

PURPOSE: This book is intended for engineers, applied physicists, and applied mathematicians.

COVERAGE: The book consists of 24 articles on such problems as wing theory, supersonic flow, theory of shells, stability, plasticity and elasticity, the bending of thin plates and shells, and various aspects of applied mathematics. No personalities are mentioned. References accompany most of the articles.

Card 1/6

Engineering Collection SOV/4000

TABLE OF CONTENTS:

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16.7600

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SOV/40-24-1-27/28

AUTHOR: Yur'yev, I. M. (Moscow)

TITLE: On the Solution of Equations of Magneto-Gasdynamics

PERIODICAL: Prikladnaya matematika i mekhanika, 1960, Vol 24, Nr 1, pp 168-170 (USSR)

ABSTRACT: The equations for the stationary plane motion of an infinitely conducting gas in a magnetic field parallel to the plane of flow:

$$\operatorname{div} H=0,\ \operatorname{curl}(W\times H)=0,\quad \operatorname{div}\rho W=0,\quad (W\cdot\nabla)W=-\frac{\operatorname{grad} p}{\rho}-\frac{1}{4\pi\rho}H\times\operatorname{curl} H \qquad (1)$$

are transformed into a system of two first order linear partial differential equations. The result is analyzed when there are no strong discontinuities. Here, H is the magnetic field intensity and p, ρ, and W are respectively the pressure, density, and flow velocity. It is first shown that the Bernouilli equation

$$w dw+\frac{dp}{\rho}=0 \qquad (3)$$

Card 1/3

holds along a streamline. By assuming that this holds in any direction and that H = kρW (k is a constant throughout the entire region of flow), the author obtains the equations

$$\frac{\partial\varphi}{\partial\theta}=\sqrt{K}\frac{\partial\psi}{\partial s},\qquad \frac{\partial\varphi}{\partial s}=-\sqrt{K}\frac{\partial\psi}{\partial\theta} \tag{13}$$

Here, θ is the angle of inclination of the velocity vector to the x-axis, $\psi(x,y)$ is a stream function defined by $\partial\psi/\partial x = -v\rho(w)$, $\partial\rho/\partial y = u\rho(w)$, ϕ is defined by $\partial\phi/\partial x = w(1 - k^2\rho/4\pi)\cos\theta$, $\partial\phi/\partial y = w(1 - k^2\rho/4\pi)\sin\theta$ and

$$\sqrt{K}=\frac{1}{\rho}\left(\frac{(1-M^2)(1-m\rho)^3}{1-m\rho(1-M^2)}\right)^{1/2},\quad ds=\pm\left(\frac{(1-M^2)[1-m\rho(1-M^2)]}{1-m\rho}\right)^{1/2}\frac{dw}{w}\ (m=k^2/4\pi)$$

Card 2/3 where M is the Mach number. The parameter values are

then characterized as to when the system is elliptic or hyperbolic in the case of a polytropic gas. For $k = 0$ the equations reduce to those of ordinary gasdynamics. The author notes that the same approximative and exact methods used to solve them can be applied in the magneto-gasdynamics case. He also notes that the equations obtained from (a) from the transformation

$$\Phi = x\frac{\partial\varphi}{\partial x} + y\frac{\partial\varphi}{\partial y} - \varphi, \qquad \Psi = x\frac{\partial\psi}{\partial x} + y\frac{\partial\psi}{\partial y} - \psi \qquad (20)$$

are more convenient in many problems. There are 7 Soviet references.

SUBMITTED: October 17, 1959

Card 3/3

YUR'YEV, I.M. (Moskva)

Some solutions of the equations of plane gas flow in a parallel magnetic field. Inzh.zhur. 1 no.4:133-137 '61. (MIRA 15:4)

1. Institut mekhaniki AN SSSR.
(Magnetohydrodynamics)

P/033/62/014/003/006/011
D237/D308

10.1200

AUTHOR: Yur'yev, I. M. (Moscow)

TITLE: Theory of plane gas flow

PERIODICAL: Archiwum Mechaniki Stosowanej, v. 14, no. 3-4, 1962, 651-662

TEXT: This paper supplements the author's earlier work. The Legendre transformation is applied to Chaplygin equations in the canonical form and the resulting equations are again reduced to the canonical form. Using Liouville's formula for a general solution and an inverse transformation, one obtains canonical equations containing two more arbitrary constants. This procedure can be repeated any number of times. Assuming the initial system to be simple, one can attempt to approximate $\sqrt{K_n}$ for adiabatic gas flow by suitable choice of $2(n - 1)$ constants. The method preserves some important properties of the solutions of the initial system of equations, e.g. undisturbed flow at infinity and, with some restrictions, the condition for the continuation of subsonic flow into

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P/033/62/014/003/006/011
D251/D308

Theory of plane gas flow

the supersonic region. The method is applied to the flow of gas with sonic transition, over the range of relative velocities $0.1 < \lambda < 1.2$. The author mentions S. A. Khristianovich and S. V. Fal'kovich. There is 1 figure.

ASSOCIATION: Institut mekhaniki Akademii nauk SSSR (Institute of Mechanics of the Academy of Sciences, USSR)

Card 2/2

ACCESSION NR: AP4026949 S/0258/64/004/001/0010/0016

AUTHOR: Yur'yev, I. M. (Moscow)

TITLE: On transonic theory of gas flow

SOURCE: Inzhenerny*y zhurnal, v. 4, no. 1, 1964, 10-16

TOPIC TAGS: transonic theory, gas flow, nozzle, Tricomi equation, power series

ABSTRACT: By means of new independant variables used in Chaply*gin equations, simple partial nozzle-flow solutions can be found with curvilinear transition lines satisfactorily approximating the Chaply*gin coefficients at high transonic velocity change intervals. This method leads to the solution of a sharp wall curvature nozzle without a limit line in the supersonic part of the flow. For the Tricomi equation one can obtain simple solutions using an arbitrary number of constants as a general statement of the nozzle-flow problem. The solution of the exact equations requires the proof of a power series convergence all of whose coefficients depend on a single arbitrary function characterizing the velocity distribution on the axis of the nozzle. Orig. art. has: 30 equations and 5 figures.

Card 1/2

ACCESSION NR: AP4026949

ASSOCIATION: Institut mekhaniki AN SSSR (Institute of Mechanics, AN SSSR)

SUBMITTED: 08Jul63 DATE ACQ: 15Apr64 ENCL: 00

SUB CODE: AI NO REF SOV: 006 OTHER: 000

Card 2/2

YUR'EV, K.

Long term credit for vegetable growing on collective farms. Moskva, Gos-finizdat, 1954-30 p. (Vpomoshch' kolkhoznoum aktivu) (55-44294)

HG2051.R9 I 8

YUR'YEV, K. (UA1BO) (Leningrad)

Work on QRP in the 14 mc. band. Radio no.5:22 My '62.
(MIRA 15:5)

(Amateur radio stations) (Radio operators)

YUR'YEV, K.

Exhibition of Soviet instruments in Cairo. Vnesh. torg. 43 no.12:37 '63. (MIRA 17:2)

YUR'YEV, K.B.

Brief survey of dinosaur finds within the U.S.S.R. Uch.zap.Len.un. no.181:183-197 '55. (MLRA 8:11)

(Dinosauria)

YUR'YEV, K.B.

Survey of tendon and ligament ossifications in living and fossil vertebrates. Uch.zap. Len. un. no.181:198-215 '55. (MLRA 8:11)
(Vertebrates--Anatomy) (Sesamoid bone) (Bone)

PAVLOVSKIY, Ye.P., akad., glav. red.; STRELKOV, A.A., red. izd.; YURIYEV, K.B., red. izd.; ARONS, R.A., tekhn.red.

[Zoologists of the Soviet Union; a reference book] Zoologi Sovetskogo Soiuza; spravochnik. Moskva, Izd-vo Akad. nauk SSSR, 1961. 292 p. (MIRA 14:7)

1. Akademiya nauk SSSR. Zoologicheskiy institut. 2. Direktor Zoologicheskogo instituta AN SSSR (for Pavlovskiy)
(Zoologists, Russian)

YURIYEV, K.B.

Andreas Vesalius as a comparative anatomist. Trudy Inst. ist. est. i tekh. 41:376-390 '61. (MIRA 15:2)

1. Zoologicheskiy institut AN SSSR.
(Vesalius, Andreas, 1514-1564)

YUR'YEV, K.B.

"C.F.Wolff and his teaching on the development of organisms" by A.E.Gaisinovich. Reviewed by K.B.IUr'ev. Zool.zhur. 41 no.8:1272-1274 Ag '62. (MIRA 15:9)

(Wolff, Caspar Friedrich, 1733-1794)
(Gaisinovich, A.E.)

Bearings of the Sun and Stars

Engineer of navigation school in Rostov-NA-Donu, Rostouskaya o., RSFSR compiled "Tables of the Trve Bearings of the Sun and Stars." M:Morskoy Flot No. 82 14 Oct 1950 Moskva

USAF "Treasure Island", on file in Library of Congress, Air Information Division, Report No. 106131. Unclassified.

YUR'YEV, K. S.

PHASE I TREASURE ISLAND BIBLIOGRAPHICAL REPORT AID 637 - I

BOOK

Author: YUR'YEV, K. S. Call No.: AF485328

Full Title: TABLES OF TRUE BEARINGS OF SUN AND STARS FOR THE LATITUDES BETWEEN 50°N AND 60°N

Transliterated Title: Tablitsy istinnykh pelengov solntsa i zvëzd dlya shirot ot 50°N do 60°N

PUBLISHING DATA

Originating Agency: None

Publishing House: "Morskoy Transport" (Marine Shipping Publishing House)

Date: 1951 No. pp.: 41 No. of copies: 1,500

Editorial Staff: None

PURPOSE: The tables are computed for the determination of the correction of the ship's compass by solar and stellar observations.

TEXT DATA

Coverage: The tables include: 1. an introduction explaining the tables and the symbols used, the determination of the compass correction by the sun with examples, tables of true star bearings with an example, two examples of the determination of the correction of the compass by the stars, a table for conversion of degrees (angular) into time; 2. tables of true sun bearings for the latitudes between 50°N and

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Tablitsy istinnykh pelengov solntsa i zvezd dlya shirot ot 50°N do 60°N

AID 637 - I

60°N for every day of the month for every 10 minutes of local time, with corrections for epochs of 1950 to 1968; 3. table for converting mean local time into sidereal time; 4. table of true stellar bearings of 15 stars for latitudes from 50°N to 60°N similar to the solar tables; 5. table of the proper time of the night for stellar observations. Mention is made that similar tables for latitudes 40°N - 50°N were published in 1949.

No. of References: None

Facilities: None

2/2

YUR'YEV, K.S.; ANAN'IN, V.I., redaktor; BOBROVA, Ye.N., tekhnicheskiy redaktor.

[Tables of true bearings of the sun and stars for northern and southern latitudes from 30 to 40 degrees] Tablitsy istinnykh pelengov solntsa i zvezd dlia severnykh i iuzhnykh shirot ot 30° do 40°. Moskva, Izd-vo "Morskoi transport," 1953. 45 p. (MLRA 7:12)
(Ephemerides) (Nautical almanacs)

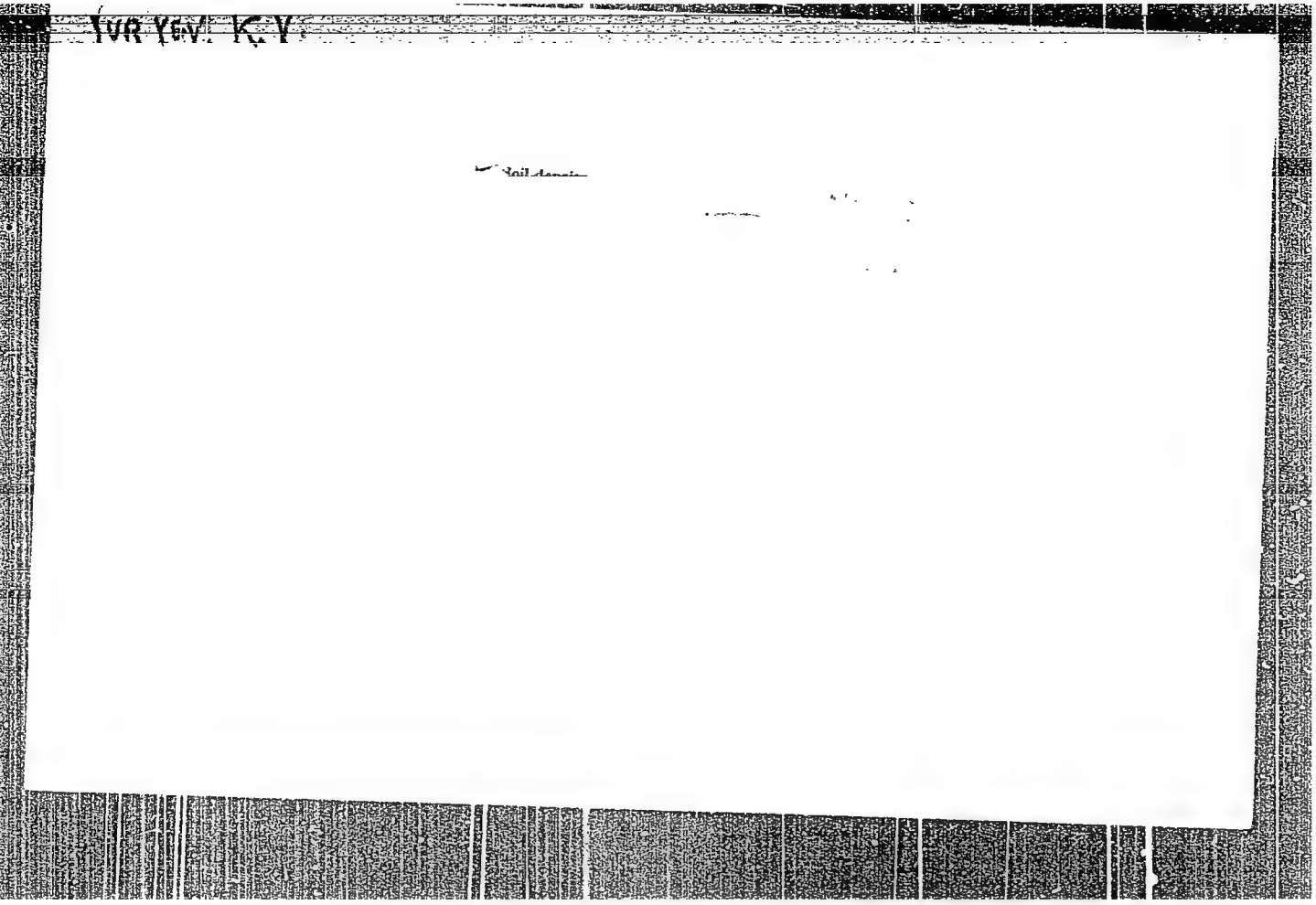
YUR'YEV, K.S.; KOPELEVICH, V.Ya., redaktor; STUDENETSKAYA, V.A., tekhnicheskiy redaktor.

[Tables of true bearings of the sun and stars for latitudes from 40 to 70 degrees] Tablitsy istinnykh pelengov solntsa i zvezd dlia shirot 40° - 70°. Moskva, Vodtransizdat, 1953. 142 p. (MLRA 7:12)
(Ephemerides) (Nautical almanacs)

YUR'YEV, K. V.

20674. Yur'yev, K.V. Soyedinitel'nyye detali trubchatykh lesov. Mekhanizatsiya stroit-va, 1949, No. 6, s. 24

SO: LETOPIS ZHURNAL STATEY - Vol. 28, Moskva, 1949



YUR'YEV, K.V.

Studying the movement of sewage by means of tagged atoms. Vod.i san.tekh. no.8:33-36 Ag '57. (MIRA 10:11)
(Sewage) (Radioactive tracers)

YURIYEV, K.V., inzhener; KODOCHIGOV, P.N., fizik.

Determining soil compactness by gamma ray investigation. Gidr.stroi.25 no.6:36-41 Jl '56. (MIRA 9:9)
(Soil mechanics) (Gamma rays--Industrial applications)

YUR'YEV, K. V., Cand of Tech Sci -- (diss) "The application of the method of tracer atoms and radioactive radiation for the study of the phenomena occuring the deposits of sandy dams or embankments." Moscow, 1957, 14 pp (MoscowEngineering-Construction Institute im V. V. Kuybyshev), 110 copies (KL, 30-57, 111)

AUTHOR: YUR'YEV, K.V. (Moscow)

TITLE: Investigation of Filtration in the Ground by the Method of Tracer Atoms. (Issledovaniye fil'tratsii v gruntakh metodom mechenykh atomov, Russian) PA - 3089

PERIODICAL: Izvestiia Akad.Nauk SSSR, Otdel Tekhn. 1957, Vol 21, Nr 3, pp 176-179 (U.S.S.R.)

Received: 6 / 1957 Reviewed: 7 / 1957

ABSTRACT: The fundamental difficulty in the investigation of filtration in the ground by the tracer atom method is due to the adsorption of the tracer matter by the ground and the exchange of isotopes. In this work the experiments were conducted on a quartz sand specimen in regard to simple and complex cobalt ions. The following were used as tracer cations: simple cation cobalt-60 of the $Co(NO_3)_2$ compound, and the complex cation $[Co(NH_3)_6]^{3+}$ of $[Co(NH_3)_6](NO_3)_3$ compound. As tracer anion the complex ion $[Co(NO_2)_6]^{3-}$ of the $(NH_4)_3[Co(NO_2)_6]$ compound was used. The investigation of the adsorption capacity of the ground comprised the tracer material distribution between the solution and the adsorbents by recording the isotherms of adsorption. On the basis of the experiments the following points were established:
1.) The static and dynamic activity of the sandy ground is diminished in regard to the simple and complex ions of cobalt with the reduction

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Investigation of Filtration in the Ground by the Method of Tracer Atoms. PA - 3089

of the P_H value of the medium, 2.) The employment of solutions of those compounds which contain in the cation a radioactive cobalt with $P_H \leq 1.5$ excludes adsorption of the tracer material by the sandy ground. The acid content does not disturb the filtration properties of the ground and warrants the possibility of being able to carry out filtration in sandy ground in the laboratory. (1 Table, 4 Illustrations and 4 Citations from Slav Publications).

ASSOCIATION: Section for the Scientific Working Out of Problems of the Regulation of the Water Supply of the Academy of Science of the U.S.S.R.

PRESENTED BY:

SUBMITTED: 14.8.1955

AVAILABLE: Library of Congress

Card 2/2

YUR'YEV, K.V., inzh.

Using radioactive isotopes in hydraulic engineering. Gidr.stroi. 26 no.11:67-72 N '57. (MIRA 10:10)
(Hydraulic engineering) (Radioisotopes)

YUR'YEV, L.

Heavy electronics. Izobr.i rats. no.3:7, 12 '63.
(MIRA 16:4)
(Electronics)
(Kapitsa, Petr Leonidovich, 1894-)

YUR'YEV, L.

Club of young astronauts. IUn. nat. no.6:26-27 Je '63.
(MIRA 16:8)

YUR'YEV, L.

Professor of "theological physics." Nauka i zhizn' 22 no.7:40 Jl '55. (MLRA 8:9)

(Coulson, Charles Alfred)

YUR'YEV, L.

"Epiphany" frost. Nauka i zhizn' 23 no.1:63 Ja '56 (MLRA 9:4)
(Frost)

YUR'YEV, L.

One more defeat for the falsifiers of science. Nauka i zhizn' 23 no.4: 40 Ap '56. (Spectrum analysis) (MIRA 9:7)

YUR'YEV, I.

The most powerful accelerator "fired first volleys." IUn.tekh. no.6:12-15 Je '57. (MLRA 10:7)

(Cyclotron)

YUR'YEV, L., insh.

Fuel that will not burn. Znan. sila 33 no.3:1-4 Mr '58.
(MIRA 11:4)

(Fuel cells)

YUR'YEV, L., inzh.

Submarine scientific laboratory. MTO no.3:60-61 Mr '59.
(MIRA 12:6)
(Oceanographic research)

YUR'YEV, L., inzh.

Water can be made fresh. Znan.sila 34 no.2:33-34 F '59.
(MIRA 12:3)

(Fresh water)

YUR'YEV, L., inzh.

Fuel should not burn. Izobr.i rats. no.1:12-14 Ja '60.
(MIRA 13:4)
(Fuel research)

YUR'YEV, L., inzh.

"Precocious" cast iron. Izbor.i rats. no.4:12-13 Ap '60.
(Cast iron) (MIRA 13:6)

YUR'YEV, L.

Electricity + heat + chemistry. Znan.sila 35 no.4:16-17 Ap '60.
(Petroleum products) (Technology) (MIRA 13:8)

YUR'YEV, L., inzh.

Only three examples. Izobr.i rats. no.9:8-12 S '60. (MIRA 13:10)
(Forging) (Rolling (Metalwork))

20906

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S/025/61/000/005/001/005
D241/D302

AUTHOR: Yur'yev, L.

TITLE: Flight - Explosion

PERIODICAL: Nauka i zhizn', no. 5, 1961, 17-22

TEXT: The article hinges on research conducted by Professor Gorimir Gorimirovich Chernyy in the field of the aerodynamics of currents with high shock waves. A method of researching and computing the movement of an elongated arrow-shaped body at great supersonic air speeds was devised [Abstractor's note: This not explained] which is based on differing phenomena: The movement in air of a slender, blunted body and the distribution of shock waves. The method has been found to be in agreement with computations of integral computers and experiments conducted in hypersonic wind tunnels. Professor Chernyy solved a series of important problems regarding the influence of the geometric forms of a body on the resistance to

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Flight - Explosion

its movement. He also established a new law of equality for the airflow of a slightly blunted body in a hypersonic current, which has diminished the number of needed costly and complex experiments. The history of flight is briefly traced initially and it is stated that aircraft speeds of up to 2,500 km/hr show poorly alongside the 40,000 km/hr achieved by space rockets. Heat has been found to be the major problem in aeronautics and astronautics. This was first felt when aircraft broke the sonic barrier and further, when rockets at speeds of 6 - 8 km/sec re-entered the atmosphere, heating up to 6,000°C. This problem was solved by the aerodynamic form of the rocket. However, the re-entry of rockets into the atmosphere takes only one or two minutes and it is an entirely different matter for aircraft designers to realize flight under these conditions from Moscow to Vladivostok which will last at least a half-hour. Even though a law of the airflow of slender pointed bodies in a supersonic current was formulated after 1946, it proved of no avail since there is no such thing as an ideally pointed body.

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Flight - Explosion

Even if there were, the body would melt and become blunted. Wind tunnel tests with a thin disc gave remarkable results at that time. A disc edge of one tenth of a millimeter changed the airflow and pressure on the disc by tens of centimeters. In this field, current aviation theory was useless and for each wing profile costly, complex and long experiments were mandatory. Professor Chernyy began his research by taking a supersonic aircraft and deleting the unnecessary lift and control surfaces and ending up with a body with an elongated arrow-shaped form. As in the case of a ship on a mirror-like surface of a river -- so it is with an aircraft. At high speeds, the shock wave presses ever closer to the body of the aircraft and at speeds of over 2 - 3 km/sec, there exists only a thin layer of turbulent air between the shock wave and body of the aircraft. The shock wave precedes the turbulent air which in turn precedes the aircraft in flight. Thus, it is not the aircraft that splits the air at high speeds, but the shock wave. This deduction opened up new vistas in research. Professor Chernyy used the mathematical process of division of zero by zero, or critical transi-

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Flight- Explosion

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D241/D302

tion. He computed the force being exerted on each point of the blunted leading edge of a body. Using this method, he was able to decrease the bluntness -- when observing that the mean value of force remains constant -- and arrive at an ideally pointed body. However, its effect on the air and the effect of the air on the profile were increased by the effect of force applied at the leading edge. This explained the fact that a shock wave moves in the air, at the apex of which there is applied force. It was possible to solve this by applying the already developed theory of the movement of air during atomic explosions. Assuming that a supersonic aircraft is replaced by a series of successive explosions at those points through which it passes, Professor Chernyy worked out simple and convenient formulae [Abstractor's note: Formulae not given]. These formulae are not only applicable in aerodynamics, but also much better suited for analyzing atomic explosions than hitherto existing methods. Solution of his formulae require only a slide rule to compute the force being exerted at a given point of a fly-

Flight - Explosion

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D241/D302

ing body. In wind tunnel research, the law of equality plays a major role, it stating that if the characteristics are equal for any two processes, then the processes occur similarly. This is Professor Chernyy's discovery - the law of equality for hypersonic flow, which has been shown to be experimentally valid. The author states that this law will play an important role in realizing flight to other planets and trans-terrestial flight that will cover distances to any given point of the globe in a matter of minutes. There are 7 figures.

Card 5/5

YUR'YEV, L.

Watchmakers. Nauka i zhizn' 28 no.7:13-16 Jl '61. (MIRA 14:8)
(Clockmaking and watchmaking--Machinery)

YUR'YEV, L., inzh.

Development of diffusion welding in a vacuum. Izobr.i rats. no.3:8-10 Mr '62. (MIRA 15:2)

(Vacuum technology)
(Welding)

YUR'YEV, L., inzh.

T.F.Blagushko's elements produce an inexpensive heat. Izobr.i rats. no.4:17-19 Ap '62. (MIRA 15:4)
(Electric heating)

YUR'YEV, L., inzh.

Integrating "screen." Izobr.i rats. no.6:14-15 Je '62. (MIRA 15:6)
(Electronic calculating machines)

YUR'YEV,L.

What awaits man on the moon. Kryl. rod. 15 no.10:21-23 O '64
(MIRA 18:1)

ACC NR: AN7004560 (N) SOURCE CODE: UR/9001/66/000/016/0036/0036

AUTHOR: Yur'yev, L. (Candidate of Technical Sciences)

ORG: none

TITLE: Moon tells about itself

SOURCE: Ekonomicheskaya gazeta, no. 16, 1966, 36

TOPIC TAGS: lunar radio emission, lunar surface

ABSTRACT:

The article cited below is a semi-popular account of the lunar observations made by V. S. Troitskiy and his group at Gor'kiy. Their work has been submitted for award of the Lenin Prize. It was discovered that the radio waves from the moon were from its interior layers, rather than the surface, and this discovery, after many refinements, has made it possible for the Gor'kiy scientists to gain a quite clear idea of the structure and properties of the upper layers of the moon. Approximately 30,000 such radiophysical lunar observations have been made at Gor'kiy and have shown that the heat conductivity of the lunar material below the surface is 50-100 times less than the heat conductivity of ordinary terrestrial rocks. No similar rocks are known on earth. It has been concluded by the Soviet specialists that this is some sort of porous slag. This appeared to be confirmed by "Luna-9", contrary to the conclusions drawn by American scientists on the basis of "Ranger" low-altitude, pre-impact photographs that there is a dust layer. The lunar surface layer has a density only half that of water, but at a depth of 3-4 cm it approaches the density of water. Then to a depth of one meter there are

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ACC NR: AN7004560

rocks resembling tuff or volcanic ash. With increasing depth in the moon the temperature increases 50 times more rapidly than on earth. With each meter of depth on the moon the temperature increases by 1½ degrees. Temperature increases almost proportional to depth, indicating approximately uniform properties of matter to a considerable depth. It is postulated that this increase of temperature with depth is due to radioactivity. The heat flux from the lunar interior to its surface is comparable to that for the earth. This would require that there be four times as much radioactive matter on the moon than on the earth. Actually, it may be greater by a factor of 5-6. It has been concluded, however, that the temperature of the lunar interior does not exceed 1,500 degrees, the melting point of silicates. The layer in which the radioactive matter is concentrated should be far thinner than on earth — 15-20 km. At a depth of 50 km the temperature of the lunar interior should be about 1,000 degrees. [JPRS: 36,555]

SUB CODE: 03 / SUBM DATE: none

Card 2/2

RYKOV, Ye.A., inzh.; YUR'YEV, L.B., inzh.

Constructing experimental rectangular culverts. Transp. stroi. 15 no.1:15-17 Ja '65. (MIRA 18:3)

GOROSHNIKOV, B.I.; DZHUN', V.S.; KUKOLEV, G.V.; MARCHENKO, Ye.Ya.; SKOMAROVSKAYA, L.A.; CHASHKA, A.I.; SHCHUKAREVA, L.A.; YURK, Yu.Yu., doktor geol.-miner. nauk, prof.; YUR'YEV, L.D.; SERDYUK, O.P., red.

[Granitoid rocks in the Azov Sea region and prospects for using them in the ceramic and glass industries] Granitoidnye porody Priazov'ia i perspektivy ikh ispol'zovaniia v keramicheskom i steklo'nom proizvodstvakh. Pod red. Iu.Iu. Iurka. Kiev, Naukova dumka, 1964. 142 p. (MIRA 17:9)

1. Akademiya nauk URSR. Kiev. Instytut mineral'nykh resursiv.

DZHUN', V.S.; YUR'YEV, L.D [IUr'iev, L.D.]

Tourmaline from pegmatites of the western part of the Sea of Azov region. Mat.z min.Ukr. no.2:116-121 '61. (MIRA 15:8)
(Azov Sea region--Tourmaline) (Azov Sea region--Pegmatites)

YUR'YEV, L.D. [IUr'iev, L.D.]

Contact reaction phenomena in Yekaterinovka granites of the Azov Sea region. Dop. AN URSR no.8:1102-1107 '63. (MIRA 16:10)

1. Institut mineral'nykh resursov AN UkrSSR. Predstavleno akademikom AN UkrSSR N.P. Semenenko [Semenenko, M.P.].
(Azov Sea region—Granite)

GOROSHNIKOV, B.I.; YUR'YEV, L.D.

Cordierite-polyamphibole and anthophyllite-cordierite rocks in the northern part of the Krivoy Rog Basin. Dokl. AN SSSR 163 no.3:720-723 Jl '65. (MIRA 18:7)

1. Institut mineral'nykh resursov, Simferopol'. Submitted February 22, 1965.

YUR'YEV, M., polkovnik zapasa

Like one's own home. Voen. znan. 41 no.6:6-7 Je '65. (MIRA 18:5)

YUR'YEV, M.

Surface ensilage of feeds. Sel'. stroi. 13 no. 9:11-12 S '58.
(MIRA 11:10)

(Ensilage)

YUR'YEV, M.; ZYUZIN, F.

Metal for our homeland. Sov.profsoiuzy 6 no.18:20-22 D '58.
(MIRA 12:2)
1. Direktor Gor'kovskogo metallurgicheskogo zavoda (for Yur'yev).
2. Predsedatel' zavkoma Gor'kovskogo metallurgicheskogo zavoda (for Zyuzin).
(Gorkiy--Metalworkers)

YUR'YEV, M., polkovnik; VORONCHIKHIN, D.A., redaktor, (gvardii polkovnik; KALACHEV, S.G., tekhnicheskiy redaktor

[Military secrets should be closely guarded] Strogo khranit' voennuiu tainy. Perer. i dop.izd. Moskva, Voennoe izd-vo Ministerstva oborony Soiuza SSR, 1953. 71 p. (MLRA 8:10)
(Official secrets)

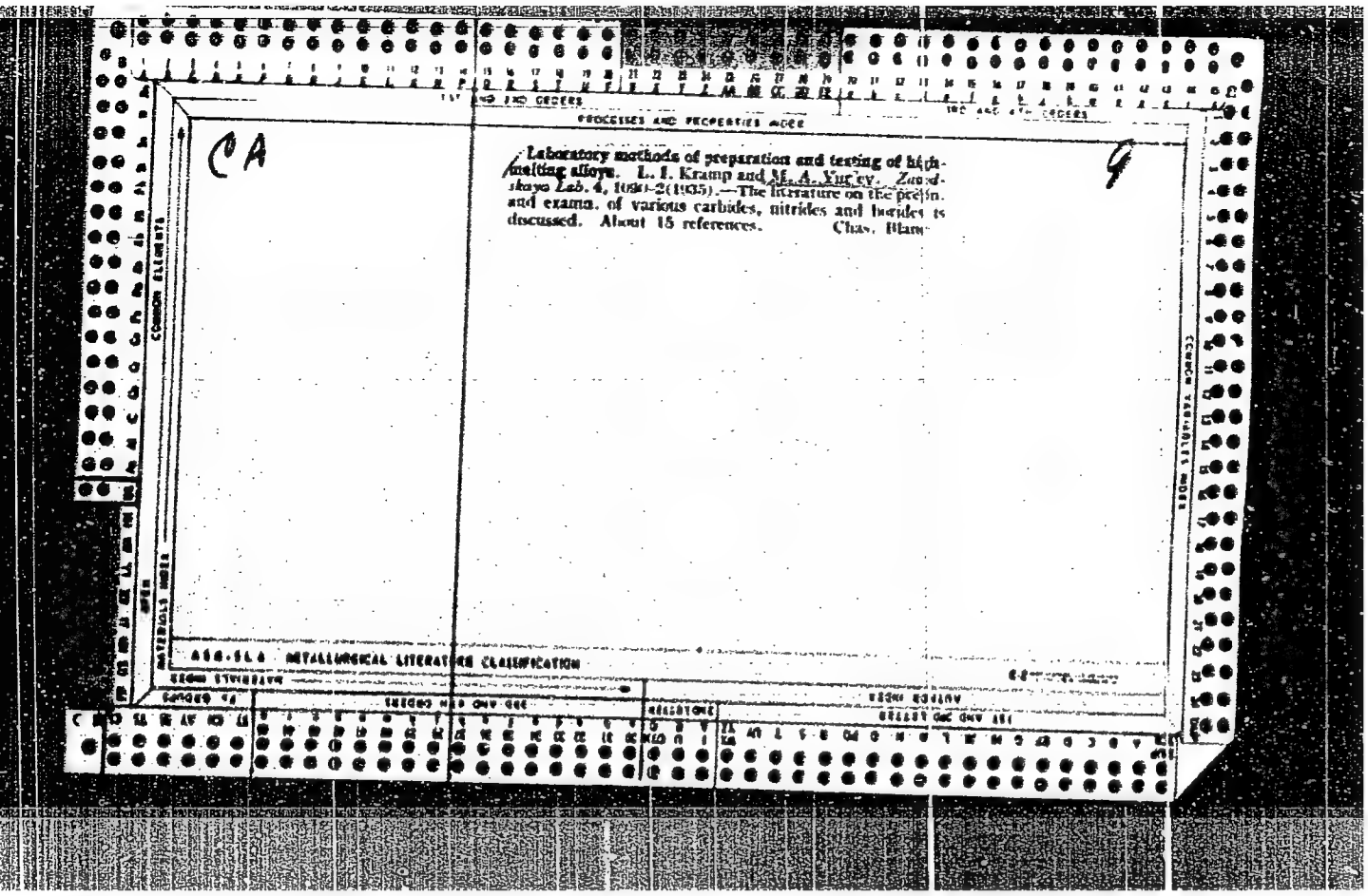
YUR'YEV, M.

Liberation struggle of Eastern peoples and international proletarian solidarity. Sov.profsoiuzy 5 no.6:80-86 Je '57. (MLRA 10:7

(World politics)

YUR'YEV, M.

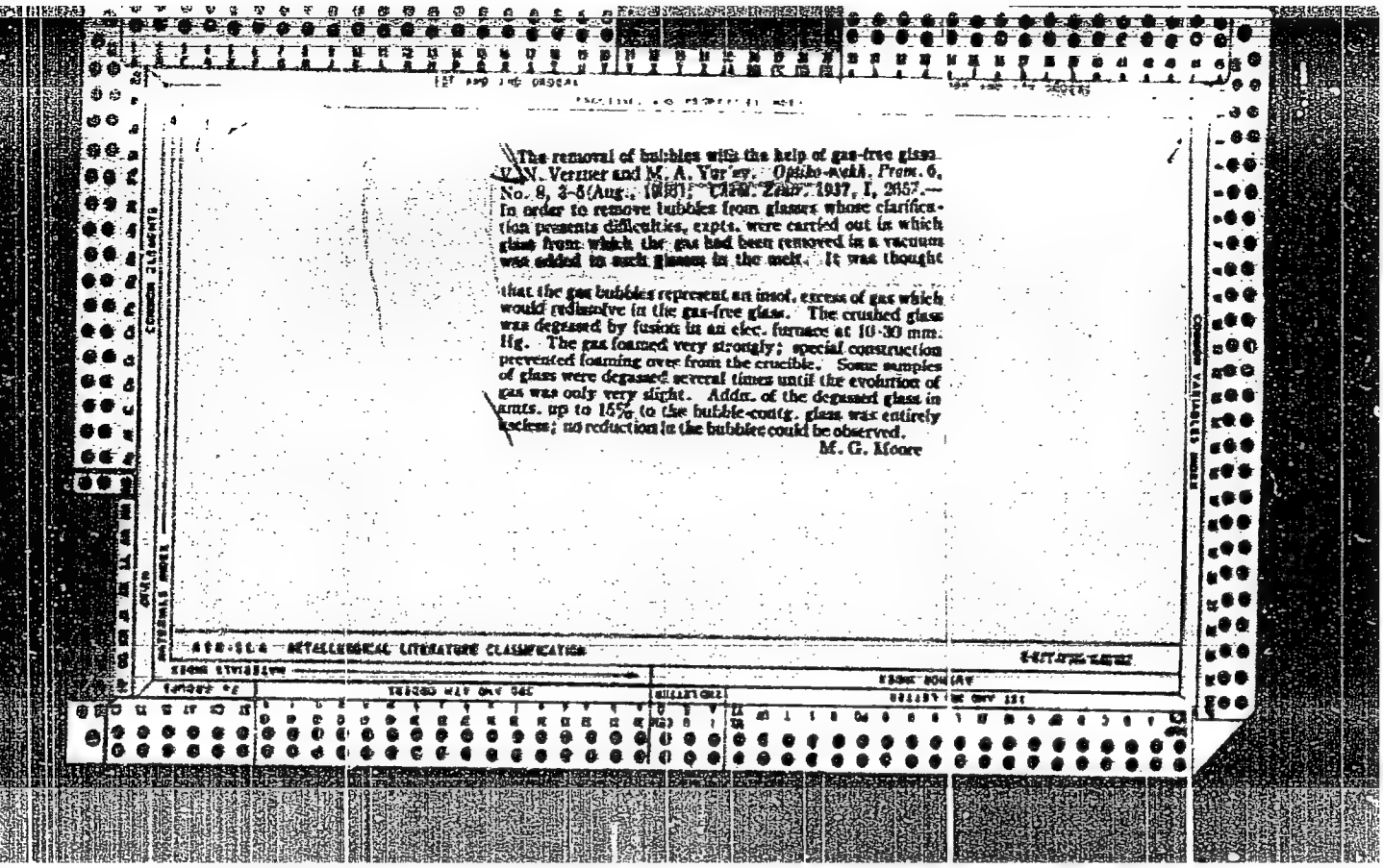
Power of truth ("To live in peace and friendship." Reviewed by M. IUr'ev). Mast.ugl. 9 no.1:18 Ja '60. (MIRA 13:8)
(Khrushchev, Nikita Sergeevich, 1894-)
(Russia--Foreign relations--United States)
(United States--Foreign relations--Russia)



CA

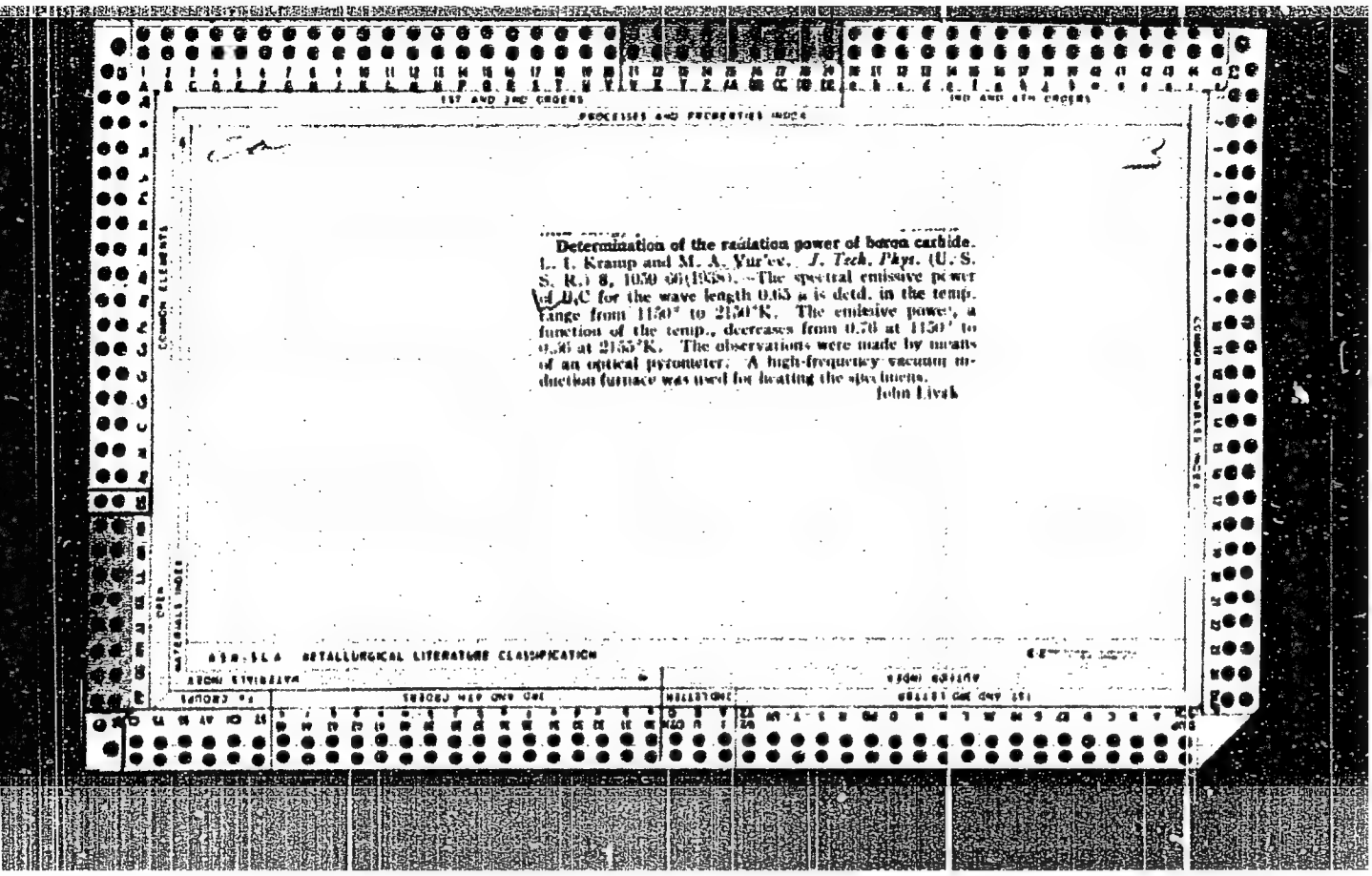
9

Laboratory methods of preparation and testing of high-melting alloys. L. I. Kramp and M. A. Yur'ev. *Zavodskaya Lab.* 4, 1081-2(1935).—The literature on the prepn. and examn. of various carbides, nitrides and borides is discussed. About 15 references. Chas. Blan



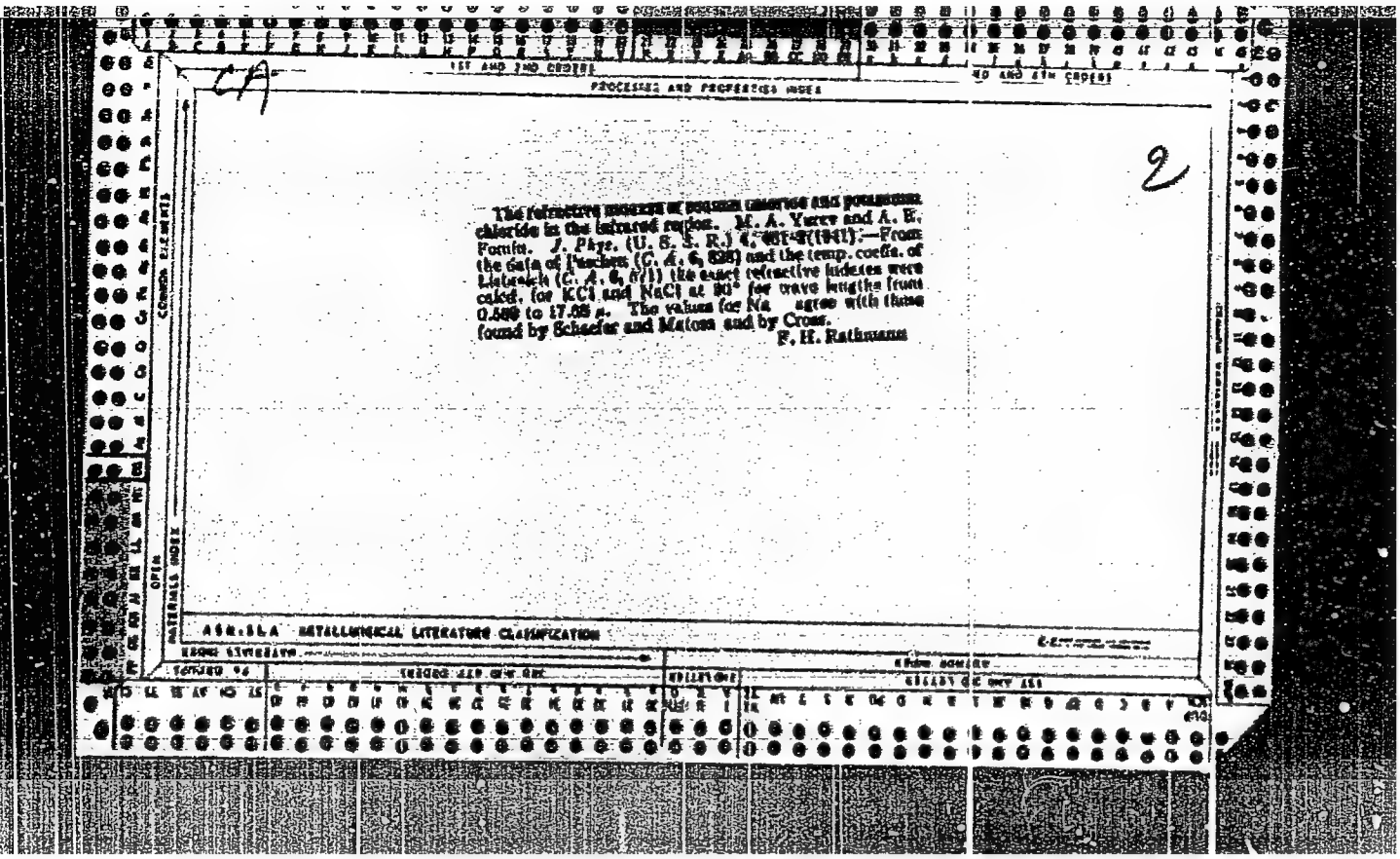
The removal of bubbles with the help of gas-free glass. V. N. Vermer and M. A. Yur'ev. *Optiko-mekh. Prom.* 6, No. 8, 3-5(Aug., 1939); *Chem. Zentr.* 1937, I, 2657.—In order to remove bubbles from glasses whose clarification presents difficulties, expts. were carried out in which glass from which the gas had been removed in a vacuum was added to such glasses in the melt. It was thought that the gas bubbles represent an insol. excess of gas which would coalesce in the gas-free glass. The crushed glass was degassed by fusion in an elec. furnace at 10-30 mm. Hg. The gas formed very strongly; special construction prevented foaming over from the crucible. Some samples of glass were degassed several times until the evolution of gas was only very slight. Addn. of the degassed glass in amts. up to 15% to the bubble-contg. glass was entirely useless; no reduction in the bubbles could be observed.

M. G. Moore

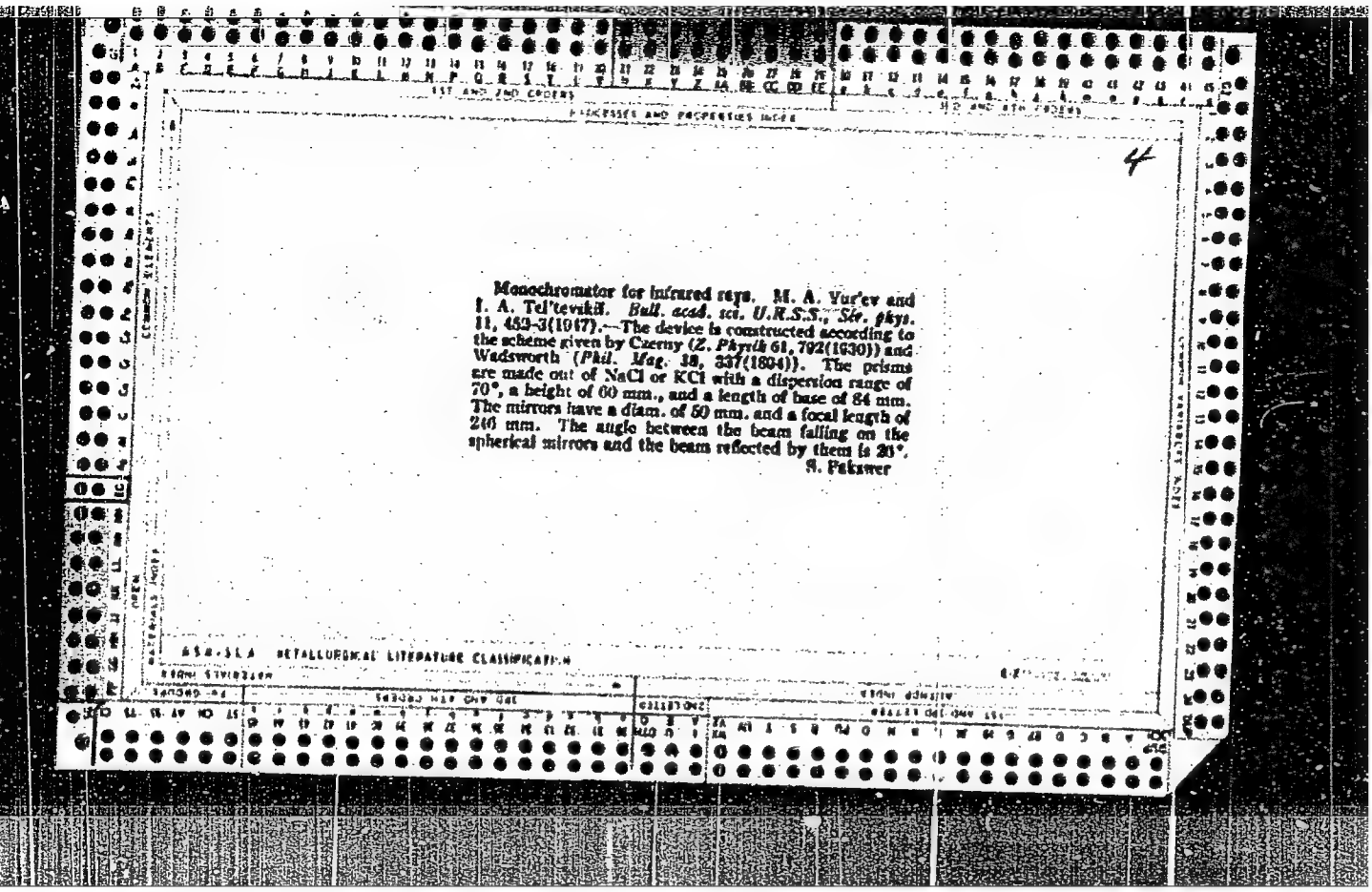


Determination of the radiation power of boron carbide. L. I. Kramp and M. A. Yur'ev. *J. Tech. Phys.* (U. S. S. R.) **8**, 1059-60(1938).—The spectral emissive power of B_4C for the wave length 0.65 μ is detd. in the temp. range from 1150° to 2150°K. The emissive power, a function of the temp., decreases from 0.70 at 1150° to 0.56 at 2155°K. The observations were made by means of an optical pyrometer. A high-frequency vacuum induction furnace was used for heating the specimens.

John Livak



The refractive indexes of potassium chloride and potassium chloride in the infrared region. M. A. Yurev and A. E. Fomin. *J. Phys.* (U. S. S. R.) 4, 401-9(1941).—From the data of Paschen (*C. A.* 6, 838) and the temp. coeffs. of Liebreich (*C. A.* 6, 871) the exact refractive indexes were calcd. for KCl and NaCl at 20° for wave lengths from 0.589 to 17.28 μ. The values for Na agree with those found by Schaefer and Matossi and by Cross.
F. H. Rathmann



Monochromator for infrared rays. M. A. Yur'ev and I. A. Tel'tevskiĭ. *Bull. acad. sci. U.R.S.S., Sér. phys.* 11, 453-3(1947).—The device is constructed according to the scheme given by Czerny (*Z. Physik* 61, 792(1930)) and Wadsworth (*Phil. Mag.* 38, 337(1894)). The prisms are made out of NaCl or KCl with a dispersion range of 70°, a height of 60 mm., and a length of base of 84 mm. The mirrors have a diam. of 50 mm. and a focal length of 240 mm. The angle between the beam falling on the spherical mirrors and the beam reflected by them is 20°.
S. Pakswer

YUR'YEV, M. A.

USSR/Physics
Spectrographs
Infrared

Jul/Aug 47

"Monochromator for Infrared Rays," M. A. Yur'yev, I. A. Tel'tevskiy, 2 pp

"Iz Ak Nauk, Ser Fiz" Vol XI, No 4

The first monochromator was constructed in 1940 at the Laboratory of Infrared Rays and the Constructing Bureau of GOI, and in 1941 was put to experimental use. Diagrams show the setup of mirrors and prisms in the equipment with a brief description of the operation of the apparatus. Comments by Savost'yanova, and Veyngerov, both of GOI. Submitted at the State Opt Inst.

PA 28T63

YUR'YEV, M. A.

PA 28T91

USSR/Physics
Spectroscopy
Spectra, Infrared

Jul/Aug 1947

"With Regard to Wadsworth's System," M. A. Yur'yev, 2 pp

"Iz Ak Nauk, Ser Fiz" Vol XI, No 4

This is a short summary of a report submitted by the author at the Military Medical Academy imeni S. M. Kirov, with respect to the spectral system stated by Wadsworth. This system is usually used in the construction of spectrometers for infrared ray study, and consists primarily of prisms and flat mirrors. Diagram of the mirror and prism setup.

28T91

YUR'YEV, M.A.; SKLYAREVICH, V.V.; KHITUN, V.A. [authors]; OSTROUMOV, G.B. [reviewer].

"Manual and practical studies in physics." Reviewed by G.B.Ostroumov. Usp.fiz.nauk 50 no.2:323-324 Je '53. (MLRA 6:7)
(Physics) (IUr'ev, M.A.) (Sklyarevich, V.V.) (Khitun, V.A.)

YUR'YEV, M. A.

Yur'yev, M. A. -- "Some Problems in the Theory of Spectral Instruments for Investigations in the Infra-Red Region." Min Higher Education USSR. Leningrad Inst of Precision Mechanics and Optics. Leningrad, 1956. (Dissertation for the Degree of Doctor in Technical Science)

So: Knizhnaya Letopis', No 12, 1956

Name: YUR'YEV, Mikhail Alekseyevich

Dissertation: Certain problems of the theory of spectral instruments for the investigation of the infra-red region

Degree: Doc Tech Sci

Affiliation: Naval Acad imeni Kirov

Defense Date, Place: 8 May 56, Council of Leningad Inst of Precision Mechanics and Optics

Certification Date: 9 Mar 57

Source: BMVO 13/57

AL'TSHULLER, K.S. (Leningrad); YUR'YEV, M.A., kandidat fiziko-matematicheskikh nauk (Leningrad).

Infrared photomicrography. Priroda 45 no.6:79-81 Je '56. (MLRA 9:8)

1. Voyenno-meditsinskoya akademiya imeni S.M. Kirova.
(Photomicrography) (Photography, Infrared)

FEDOROV, N.T., SKLYAREVICH, V.V., YUR'YEV, M.A., MAHIROVA, O.F.

Color measurements in the region of higher colorimetry. Probl. fiziol.opt. 12:225-238 '58 (MIRA 11:6)

1. Kafedra meditsinskoy fiziki Voyenno-meditsinskoy ordena Lenina akademii im. S.M. Kirova.
(COLORIMETRY)

ANDON'YEV, S.M.; ZHLOBINSKIY, Ye.I.; YUR'YEV, M.A.; STRUGATSKIY, L.F.; YELISEYEV, B.V.; TSELUYKO, Yu.I.; SUVOROV, A.I.; FILIP'YEV, O.V.; KALASHNIKOV, P.A.; L'VOV, V.M.; SULOYEV, V.A.

Evaporation cooling of rolling-mill heating furnaces in open-hearth-furnace plants and complex utilization of secondary power resources. Prom. energ. 14 no.1:37-39 Ja '59. (MIRA 12:1)
(Furnaces, Heating) (Boilers)

YUR'YEV, Mikhail Alekseyevich; SKLYAREVICH, Viktor Vladimirovich; KHITUN, Vsevolod Andreyevich; GOFMAN, Irina Arturovna; YUZHAKOV, V.M., red.; PERKOVSKAYA, G.Ye., red. izd-va; MURASHOVA, V.A., tekhn. red.

[Physics class work for students of medical institutes] Praktikum po fizike; [dlia meditsinskikh vuzov. By] M.A.IUr'ev i dr. Moskva, Gos.izd-vo "Vysshaia shkola," 1962. 266 p. (MIRA 15:11)

(Physics)

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[Laboratory manual on physics] Praktikum po fizike. [By] M.A.IUr'ev i dr. Moskva, Vysshaia shkola, 1965. 334 p. (MIRA 18:12)

YUR'YEV, M. F.

China - Trade - Unions

Brief history of the trade-union movement in China. Teng Chung-hsia. Reviewed by M. F. Yur'yev. Sov. kniga No. 2, 1953.

9. Monthly List of Russian Accessions, Library of Congress, June 1953. Unclassified.

YUR'YEV, Mikhail Filippovich; EHRENBURG, G.B., otvetstvennyy red.; RIVKINA, O.S., red.izd-va; YAKOVLEVA, Ye.N., tekhn.red.

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YUR'YEV, MIKHAIL GRIGOR'YEVICH.

BATALOV, Nikolay Mikhaylovich; YUR'YEV, Mikhail Grigor'yevich; HUSVIK, Boris Karlovich; DVORYANKIN, Mikhail Petrovich; GORNOV, Mikhail Maksimovich; NIKIFOROVA, Anna Ivanovna; VINOGRADOV, N.V., redaktor; LARIONOV, G.Ye., tekhnicheskiy redaktor

[Fifth five-year plan in progress; activity of the Kirov "Dinamo" plant in Moscow] Piataia piatiletka v deistvii; opyt raboty Moskovskogo zavoda "Dinamo" imeni S.M.Kirova. Moskva, Gos. energ. izd-vo, 1954. 102 p. [Microfilm] (MLRA 8:2)
(Moscow--Electric industries)

VEYS, D.A.; KOKHTEV, A.A.; LELYANOV, V.A.; MALYNICH, V.I.; POVOLOTSKIY, L.I.; RASKATOV, V.M., inzhener; TOPORNIN, G.S.[deceased]; LAPUSHKIN, A.D., dotsent, retsenzent; USPASSKIY, P.P., professor, retsenzent; ARKHANGEL'SKIY, V.M., kandidat tekhnicheskikh nauk, retsenzent; REGIRER, Z.L., kandidat tekhnicheskikh nauk, retsenzent; SHAROV, M.Ya., kandidat tekhnicheskikh nauk, retsenzent; YUR'YEV, M.G., inzhener, retsenzent; LYUTIKOV, A.F., redaktor; MODEL', B.I., tekhnicheskiy redaktor.

[Manual on materials for the construction of locomotives and railroad cars] Spravochnik po materialam dlia lokomotivo- i vagonostroeniia. Pod obshchei red. V.M. Raskatova. Moskva, Gos. nauchno-tekhn. izd-vo mashino-stroit. lit-ry, 1956. 481 p.
(Locomotives--Construction) (Railroads--Cars--Construction)

ACC NR: AP7005005 SOURCE CODE: UR/0054/66/000/003/0026/0029

AUTHOR: Dmitriyev, Yu. Yu.; Yur'yev, M. S.

ORG: none

TITLE: Variational principle for the intensity of forbidden transitions

SOURCE: Leningrad. Universitet. Vestnik. Seriya fiziki i khimii, no. 3, 1966, 26-29

TOPIC TAGS: variational method, forbidden transition, perturbation theory

ABSTRACT: It is shown that the functional (or variational principle)

$$J(\varphi, \varphi') = \int \varphi (H_0 - E_0)\varphi' d\tau + \int \varphi' V \Psi_0 d\tau + \int \varphi U \Psi_0' d\tau,$$

(where φ and φ' are trial functions; H_0 is the Hamiltoninan of a system whose eigenfunctions are designated ψ_0 and eigenvalues E_0; U and V are perturbations) permits an approximate calculation of the probability of forbidden transitions, which are allowed in the first-order perturbation theory. Inequalities are derived which permit an estimate from above and below for the corresponding matrix elements. By taking functions with parameters as the trial functions, one can reduce the calculation of the sum

$$\langle i|U|f\rangle = -\left\{\langle \Psi_0 | V \frac{1}{H_0 - E_0} U | \Psi_0' \rangle + \langle \Psi_0' | V \frac{1}{H_0 - E_0} U | \Psi_0 \rangle\right\}$$

UDC: 530.145.61

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ACC NR: AP7005005

(where i and f are the initial and final state respectively) to solving algebraic equations, instead of the differential equation which results from the method of V. M. Buymistrov (Litovsk. fiz. sb., No. 1-2, 94, 1963) and which is very difficult to solve. In conclusion, authors are deeply grateful to P. P. Pavinskiy for supervising the work and to T. K. Rebane for discussions. Orig. art. has: 18 formulas.

SUB CODE: 20/ SUBM DATE: 25Apr66/ ORIG REF: 004/ OTH REF: 001

Card 2/2

YUR'YEV, M. YA.

Rukovodstvo k prakticheskim zaniatiiam po fizike /Manual of practical problems in physics/. Leningrad, Voenno-Meditsinskaia Akad., 1952. 308 p

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YUR'YEV, N.

Machine-Tractor Stations

Work organization rules in practice, MTS 13 No. 1, 1953

Monthly List of Russian Accessions, Library of Congress, June 1953, Uncl.

YUR'YEV, N. (Riga).

"Nadezhda" glider. Kryl. rod. 8 no.7:4 Jl '57. (MLRA 10:9)
(Latvia--Gliders (Aeronautics))